

PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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ORDINARY MEETING

WEDNESDAY, 3RD DECEMBER, 1952, at 5.30 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting and of the Special Meeting held on 5th November, 1952.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library. [See page 51.]
5. Nomination of Officers and Council for 1953.
6. Admission of Fellows.
7. Papers accepted for publication in the *Transactions*.
8. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

Note.—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

9. Communications.

Dr. R. C. Rainey

(*Desert Locust Survey H.Q., Nairobi*)

Desert Locust Swarm Movements and Weather.

[ABSTRACT]

From the relatively low air-speeds (7–11 m.p.h.) which have been recorded for flying locusts over a considerable range of field and laboratory conditions, and from the absence of any demonstrable fixed and consistent orientation of flying locusts to potential orientating factors such as wind and sun, displacement down-wind must be expected to dominate long-range swarm movements.

Work at the Anti-Locust Research Centre over the last twenty years has shown that many of the regular major seasonal movements of Desert Locust swarms do in fact take place down the corresponding seasonal prevailing winds. Furthermore, certainly some—and possibly all—of the exceptions to this generalisation represent movements down non-prevailing winds. There is for example good evidence that the 2000-mile movement of swarms across Arabia from eastern Africa early this year resulted from a succession of down-wind displacements, during periods of warmer southerly and westerly winds which interrupted the prevailing cooler north-easterlies characteristic of this area and season. Air temperature thus appears to have operated as a “rectifying factor” (Kennedy, 1951) favouring displacement in a north-easterly direction.

Some four years ago it was accordingly considered useful to begin to examine some of the meteorological implications of down-wind movement. A synoptic chart, recording simultaneous observations of weather over a wide area, demonstrates areas of convergence, across the boundaries of which surface winds show a net excess of inflowing air over outflow, and areas of divergence, across the boundaries of which outflow exceeds inflow. Convergence is an essential factor in the production of widespread heavy precipitation, while divergence is generally associated with fair weather. Now, on balance, winds within a few thousand feet of the earth's surface may be regarded as ultimately blowing from areas of divergence to areas of convergence; and displacement down-wind may therefore be expected to result in movement sooner or later into areas of convergence. It was therefore suggested that the major displacements of locust swarms take place towards areas of convergence, and that swarms may in general be expected to collect in the vicinity of such areas.

This hypothesis has been fully supported by a series of comparisons of swarm records, which are regularly received at Nairobi from all territories affected by the Desert Locust, with the corresponding current synoptic charts of the whole area concerned, which for the last three years have been provided daily by the Central Forecast Office of the East African Meteorological Department.

Thus one of the particular areas of convergence which has been found to be of major importance in this connection is the Intertropical Convergence Zone (I.C.Z.), between trade-wind and monsoon currents originating on opposite sides of the equator. During the northern summer, when much of the invasion area of the Desert Locust is affected by the I.C.Z., and the latter may remain relatively stationary for periods of several weeks at a time, the overall distribution of swarms at such periods has been found to correspond very closely with the position of the I.C.Z. Furthermore, movements of the I.C.Z. at other seasons have been found to be intimately associated with particular long-range swarm movements (*Nature*, **168**, 1057). This association has already been found of value in the preparation of short-period tactical forecasts of swarm movements, to supplement the usual, more generalised seasonal forecasts, which are based on historical evidence.

Movement with a necessarily highly convergent air-flow may well account for the frequently-recorded association of exceptional rains with the arrival of locusts, and Stephenson has suggested that this effect may contribute at times to the process of gregarisation, by concentrating adult *solitaria* from long distances into limited areas which provide suitable conditions of moisture and vegetation for breathing. Such a mechanism is likely to be of vital importance to the continued existence of species such as the Desert Locust, inhabiting regions of scanty and erratic rainfall with an egg-stage which can be successfully completed only in the continued presence of free water. Flight resulting, even without consistent orientation, in displacement down-wind may thus have a substantial survival value for many insects, and may in fact have made possible the initial colonisation of extensive areas in which moisture supplies are only intermittently adequate.

TEA will be served in the Library before the meeting.

Serial Publications in the Library of the Royal Entomological Society of London.

A list of the serial publications in the Society's Library, with the titles abbreviated in accordance with the *World List of Scientific Periodicals*, has now been prepared. Copies may be obtained in the Society's office, price (to Fellows) 3s. 9d.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 5TH NOVEMBER, 1952.

Mr. N. D. RILEY, C.B.E., President, in the Chair.

Present 58 Fellows and 14 Visitors.

The minutes of the Ordinary Meeting held on 1st October, 1952, were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : Mr. S. M. Taqi Ahsan ; Mr. Ian Michael Crichton, B.Sc. ; Mr. Michael Gordon Emsley ; Mr. Philip Frank Entwistle ; Mr. Peter Dickinson Gabbutt, B.Sc. ; Mr. William Weir Macdonald, B.Sc. ; Mr. Bashambar Lal Marwaha, B.Sc. ; Dr. Ram Nath Mathur, M.Sc., Ph.D., Miss Joyce Maynard ; Mr. Hugh Edward Haldane Paterson, B.Sc. ; Mr. Clare Dudley Putnam, B.A. ; Mr. David Robert Raggie ; Mr. Jeremy Roffey ; Mr. Ronald Harvey Simons, B.Sc., A.R.C.S. ; Mr. Braj Kishore Sinha, B.Sc., M.Agr.Sc. ; Mr. Walter Reginald Smith, B.A. ; Mr. A. Terence Thompson, B.Sc. ; Dr. Cecil Raymond Twinn, M.Sc., Ph.D. ; Miss Dorothea B. Willrich ; Mr. David John Greathead.

For the second time (taken as read) : Mr. Reginald Lousada Barrow ; Professor Lewis Berner ; Mr. Kenneth Ridgway Crawshaw ; Mr. Geoffrey Crisp ; Mr. Roy Arthur French, B.Sc. ; Mr. Peter Graham ; Mr. Percy Rodriguez ; Mr. Parkash Lal Renjhen, M.Sc. ; Dr. Herbert H. Ross ; Mr. David Spencer Smith ; Mr. Hari Mohan Lal Srivastava, M.Sc. ; Mr. Norman Edward Stacey, B.Sc., A.R.I.C. ; Mr. Cecil Charles Tonsley ; Mr. Henry Robert Wallace, B.Sc.

The Secretary read the names of the following newly elected Fellows of the Society : Professor Johan Wilhelm Christiaan Geyer, D.Sc., University of Pretoria, Pretoria, S. Africa ; Professor Elio Lucchese, Facoltà di Agraria, Università de Perugia, Italy ; Mr. Har Kishanlal Sikka, B.Sc., Assistant Locust Entomologist, Palanpur, India ; Mr. Claude Sisley, 52, St. George's Square, London, S.W. 1.

In accordance with the Bye-laws, Chapter XXII, Paragraph 1, and Chapter XXV, Paragraph 1, the Secretary read for the third time the notice of a Special Meeting to be held in the Society's rooms on Wednesday, 5th November, to consider and vote upon certain proposed alterations to the Bye-laws.

The proposed alterations having been circulated to Fellows (*Proc. R. ent. Soc. Lond.* (C) 17 : 35-36), they were taken as read.

Thanks were voted to donors of gifts to the Library since the last meeting.

The Secretary read for the first time the following names of Fellows nominated by Council to serve as Officers and Council for 1953.

President.—Professor P. A. Buxton, C.M.G., M.A., F.R.S.

Treasurer.—Dr. N. E. Hickin, Ph.D.

Secretary.—Mr. E. B. Britton, M.Sc.

Editor.—Mr. J. Balfour-Browne, M.A.

Other Members of Council :

Dr. C. H. Andrewes, F.R.S.

Miss T. Clay, B.Sc.

Miss R. M. Davenport.
 Mr. G. H. L. Dicker.
 Mr. A. E. Gardner.
 Dr. W. J. Hall, C.M.G., M.C., D.Sc.
 Mr. W. D. Hincks, M.Sc.
 Lieutenant-Colonel W. B. L. Manley.
 Mr. L. Parmenter.
 Dr. C. Potter, Ph.D., M.Sc.
 Dr. O. W. Richards, M.A., D.Sc.
 Mr. N. D. Riley, C.B.E.
 Professor G. C. Varley, M.A., Ph.D.

Alternative nominations supported by four properly qualified Fellows of the Society should reach the Secretary before the meeting to be held on 3rd December.

Mr. R. W. Crosskey, Mr. E. T. Giles, Mr. J. G. Pendergrast and Mr. B. L. Sage signed the Obligation Book and were admitted Fellows of the Society.

Mr. Arthur Welti exhibited: (1) A small collection made by himself of relatively common Geometers occurring on and around the Chalk Hills of North Surrey.

(2) A paired couple of the Humming Bird Hawk Moth, *Macroglossa stellatarum* L., taken by him in North Switzerland at the end of May. The paired insects were flying backwards and forwards over the market place at Weinfelden. This seems to indicate that the insect which hibernates pairs in the spring and it would be interesting to know whether it pairs in flight.

Mr. W. D. Hincks exhibited a specimen of the Odd Beetle, *Thylodrias contractus* Motschulsky, 1839 (Coleoptera: Dermestidae). He said that this beetle, also known as *Ignotus enigmaticus* Slosson, 1903, and *Hospitopterus efflatouni* Pic, 1921, had been recorded from Tiflis (1839), Astrakhan (1894), New York (1903), Milwaukee (1908), St. Petersburg (1909), Cairo (1921), Canada (1932), Chicago (1933), Texas and Minnesota, 1939 (see Barber, 1947, *Ann. ent. Soc. Amer.* 40: 344). It had also recently been discovered at Trieste and Madrid. The female was entirely apterous, the dissimilar looking male being normally alate. The insect fed on museum material of various kinds. On 4th April, 1950, a living female was discovered in the Manchester Museum and was traced to a box of old duplicate Cassid beetles received from Vienna in March, 1950.

Dr. H. E. Hinton exhibited slides of pupae of an Oriental and an African species of Lycaenid Butterfly (*Spalgis epeus* Westwood and *S. lemolea* Druce respectively), the markings on which showed a remarkable similarity to the faces of monkeys of these regions.

Mr. Welti also commented on the recurrence of the image of the face in nature, quoting an unidentified spider which had come into his possession, the body of which bore markings resembling the human face.

Mr. H. D. Swain exhibited three specimens of *Alloeotomus gothicus* Fall. (Hemiptera: Miridae), taken in Surrey in 1951. He believed this was the first time this insect had been recorded from this country.

Dr. Massee said he had taken this Capsid in some numbers at Broadwater Forest, Sussex, in the last three years and it also occurred in several other localities, so that it must now be widely established. Mr. Leston said that, as it was larger than most British Capsids, it was unlikely that Butler and Saunders could have overlooked it and, although now widespread, it must be of recent introduction. Mr. Hawkins suggested that, if it was associated with pine, it might well have been introduced with saplings.

Mr. F. T. Vallins exhibited, on behalf of Mr. K. Spencer, the following five species of Agromyzidae new to the British list, which he had bred from their leaf-mines during the past twelve months:

(1) *Phytomyza carvi* Hering, mining *Carum carvi* on Hampstead Heath in May.

(2) *Phytomyza angelicastris* Hering, mining *Angelica silvestris* on Hampstead Heath in May and June.

(3) *Phytomyza petoi* Hering, mining *Mentha* sp. in a garden at Epsom in June.

(4) *Napomyza lonicerella* Hendel, mining *Lonicera periclymenum* at Chiddingfold in May and on the Lizard, Cornwall, in June.

(5) *Agromyza anthracina* Meigen, mining *Urtica dioica* at West Bay, Dorset, in June.

These identifications had been confirmed by Professor Hering.

The exhibit also showed the leaf mines of the five new species, and a selection of other species illustrating their characteristic leaf-mines. In Mr. Spencer's absence Mr. Vallins communicated his notes on two of these species, as follows :

(a) *Phytobia iridis* Hendel, mining *Iris foetidissima*. This had previously only been reported in this country from Devon and the Isle of Wight. He had found it in Wilts., Oxford and Kent, and it appeared to occur wherever its food-plant grew.

(b) *Phytomyza ramosa* Hendel. This had only once been reported in this country. He found it was common in Dorset, mining the lower leaves of its food-plant, teasel.

Mr. Spencer had puparia of a further seven species new to Britain from which he hoped to obtain emergences in the spring. He felt that the interesting results of this one season's work on this family clearly suggested that many further species of Agromyzidae remained to be discovered in Britain.

Mr. R. B. Benson exhibited British specimens of an undescribed sawfly of the genus *Nematus* (Hymenoptera : Tenthredinidae) closely related to the common red-currant and gooseberry sawflies, *N. ribesii* Scopoli and *leucotrochus* Hartig, but attacking black currants (*Ribes nigrum* L.), which both the common species avoid. He also showed drawings of the larva of the new species which is more like that of *N. leucotrochus* than of *N. ribesii* and was in fact at first mistaken for that of *N. leucotrochus*. The larvae were found by Dr. Anne Sanderson in her garden in Dundee in July of this year, and by Mr. R. C. Twyman in a garden in Gloucestershire, also in July. The species has two or three generations a year, while *N. leucotrochus* has only one. One or two earlier records of the common gooseberry and red currant sawflies attacking black-currants probably refer really to this new species.

Dr. F. van Emden exhibited a series of green bottle-like Muscidae. He said that green bottle-like flies were found in at least three families of Diptera, even in this country. Apart from two green British species of Tachinidae, there are a considerable number of Calliphoridae and some Muscidae. In the latter family the metallic forms are again found in a considerable number of genera, not all of them closely related. The most interesting group is perhaps a number of small *Pyrellia*-like species, which by their systematic characters are more closely related to the black *Morellia* than to the metallic *Pyrellia*. Of most of these species only very few specimens are known.

Professor G. C. Varley exhibited specimens of *Thysanus elongatus* (Girault), a Chalcid wasp new to Britain. He said that, amongst Dr. B. N. Blood's beautifully mounted microscope slide collection, now in the University Museum, Oxford, were found several slides of the uncommon *Thysanus ater* Walker, and two slides

of another species. The male specimen is unlabelled, but the female bears the label "Berrow, Somerset, 18.vii.1928. *Thysanus pectinatus* Nov." Evidently Blood recognised that it was new, but apparently he did not publish any account of it.

Dr. Domenichini of Milan had recently examined the specimens and had named them *Matritia elongata* (Gir.). This species, first described from the U.S.A. in 1916, has been bred as a hyperparasite of the scale insect *Pseudococcus citri* Risso in Italy by Domenichini, and redescribed in 1952 (*Boll. Zool. agric. Bachic.* 17: 5-25).

The Honorary Secretary exhibited, on behalf of Dr. W. E. China, two new species of marine Hemiptera (*Halobates* sp. n. and *Halovelis* sp. n.), collected in the Monte Bello Islands by Surgeon-Commander Wedd, R.N., and Mr. F. L. Hill, of H.M.S. "Campania."

The President exhibited a collection of butterflies from Rennell Island illustrating the work of Professor Hale Carpenter on the distribution of the genus *Euploea* in the Pacific. He said that, although Rennell Island appeared to form the extreme end of the Solomon Islands chain, it was in fact on the edge of the New Guinea shelf, being separated from the Solomons by a deep channel. This possibly explained why the main affinities of the fauna lay with New Guinea rather than with the other Solomon Islands.

E. B. BRITTON, *Honorary Secretary.*

The next meeting (Annual Meeting) will be held on 21st January, 1953.

PROCEEDINGS OF THE SPECIAL MEETING HELD ON 5TH NOVEMBER, 1952.

Mr. N. D. Riley, C.B.E., President, in the Chair.

The President said that the notice summoning the Special Meeting having been read at three Ordinary Meetings, consideration would now be given to the changes in the Bye-Laws proposed by Council and printed on page 36.

Before proceeding, the Secretary said that there was one amendment Council now wished to make to the proposed alterations as printed. When the amendments were submitted to the solicitors they were approved by them with the suggested addition of the word "Book" in Chapter XVII, para. 4, line 3, so that the amendment then read, "No person shall have his name printed in the Annual List of Fellows of the Society until such person shall have paid the Admission Fee and signed the Obligation Book, and no such person" This would limit the printed list of Fellows to those who had attended a meeting and been formally admitted, and the large number who were never able to be present would be automatically excluded. As it was desirable that the list should include all Fellows who had paid the Admission Fee, Council proposed that the reference to the Obligation Book be deleted, so that the proposed amended Chapter XVII, para. 4 would read, "No person shall have his name printed in the Annual List of Fellows of the Society until such person shall have paid the Admission Fee, and no such person shall have liberty to vote at any election or meeting of the Society before he shall have been admitted as directed in Chapter XIV, Section 4."

After some discussion the proposed changes as printed on page 36, but incorporating the above amendment, were put to the meeting and carried.

E. B. BRITTON, *Honorary Secretary.*

ADDITIONS TO THE LIBRARY.

Presented.

- Clegg, John. *The Freshwater Life of the British Isles*. Sm. 8vo. London. 1952. [Wayside and Woodland Series]. [The Publishers].
- Daglish, Eric Fitch. *Name this insect*. Sm. 8vo. London. 1952. [The Publishers].
- Imperial College of Science and Technology. *Calender, 1952-3. Prospectus, 1953-4*. [The College].
- Linssen, E. F., compiler. *Nature interlude. A book of natural history quotations*. 8vo. London. 1951. [The Publishers].
- Proceedings of the Linnean Society of London. July, 1882, October, 1886, July, 1887*. [Hope Department of Entomology, Oxford].

Purchased.

- Hansen, Victor. *Biller XV, XVI. Rovbiller 1, 2 [Coleoptera, Staphylinidae]*. Sm. 8vo. København. 1951, 1952. [Danmarks Fauna Bd. 57, 58].
- Larsson, S. G. *Myrer [Hymenoptera, Formicidae]*. Sm. 8vo. København. 1943. [Danmarks Fauna Bd. 49].

In addition separates were presented by Dr. C. E. M. Gunther; Dr. E. A. Cockayne; Dr. H. Cleu; Mr. N. C. E. Miller; Professor P. A. Buxton, C.M.G., F.R.S.; Canadian Department of Agriculture; Ministerio de Agricultura y Ganaderia, Republica Argentina; Dr. O. W. Richards; Mr. A. Richardson; American Entomological Society; Mr. M. Niblett; Commonwealth Institute of Entomology; and the Cawthron Institute.

NOTICES

In addition to the *Transactions and Proceedings* (Series A, B and C), the following publications are available on application at the Society's rooms :—

THE GENERIC NAMES OF BRITISH INSECTS, WITH CHECK LISTS OF THE SPECIES, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London, with the assistance of the Department of Entomology of the British Museum (Natural History) :—

Part 1. Recommendations relating to the publication of the Committee's								Price	6d.
	Reports	..	..	..	..	..	..	..	..
„	2. Rhopalocera	..	..	..	..	..	..	„	3s. 6d.
„	3. Odonata	..	..	..	..	..	..	„	3s. 6d.
„	4. Neuroptera	..	..	..	..	..	..	„	3s. 6d.
„	5. Hymenoptera Aculeata	..	..	..	..	..	..	„	15s. 0d.
„	6. Coleoptera Carabidae	..	..	..	..	..	..	„	10s. 0d.
„	7. Coleoptera Hydradephaga	..	..	..	..	..	..	„	5s. 0d.
„	8. Hemiptera Heteroptera	..	..	..	..	..	..	„	39s. 0d.
„	9. Coleoptera Staphylinidae	..	..	..	..	..	..	„	40s. 0d.

HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS.

The Society has undertaken the issue of a series of publications intended to provide illustrated Keys to the whole of the British Insect Fauna so far as this is possible.

It is proposed to cover this field in a series of ten volumes, arranged as follows :—

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| <p>I. Part 1. General Introduction.</p> <p>„ 2. Thysanura.</p> <p>„ 3. Protura.</p> <p>„ 4. Collembola.*</p> <p>„ 5. Dermaptera and Orthoptera.†</p> <p>„ 6. Plecoptera.†</p> <p>„ 7. Psocoptera.*</p> <p>„ 8. Anoplura.</p> <p>II. Hemiptera.*</p> <p>VI. Hymenoptera : Symphyta* and Aculeata.*</p> <p>VII. Hymenoptera : Ichneumonidea.*</p> <p>VIII. Hymenoptera : Cynipoidea, Chalcidoidea and Serphoidea.</p> <p>IX. Diptera : Nematocera† and Brachycera.</p> | <p>Part 9. Ephemeroptera.†</p> <p>„ 10. Odonata.†</p> <p>„ 11. Thysanoptera.*</p> <p>„ 12. Neuroptera.</p> <p>„ 13. Mecoptera.</p> <p>„ 14. Trichoptera.</p> <p>„ 15. Strepsiptera.</p> <p>„ 16. Siphonaptera.</p> <p>„ 17. Coleoptera.*</p> <p>X. Diptera : Cyclorrhapha.*</p> |
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The following parts are now available :—

- Vol. I, Part 5. Dermaptera and Orthoptera. By W. D. Hincks. Price 3s. 6d. plus postage.
- Vol. I, Part 6. Plecoptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 9. Ephemeroptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 10. Odonata. By F. C. Fraser. Price 7s. 6d. plus postage.
- Vol. V, Part 12. Coleoptera : Cerambycidae. By E. A. J. Duffy. Price 3s. 6d. plus postage.
- Vol. VI, Part 2a. Hymenoptera : Symphyta (part). By R. B. Benson. Price 10s. 6d. plus postage.
- Vol. VI, Part 2b. Hymenoptera : Symphyta (contd.). By R. B. Benson. Price 15s. 0d. plus postage.
- Vol. IX, Part 1. Diptera : Introduction and Key to Families. By H. Oldroyd. Price 7s. 6d. plus postage.
- Vol. IX, Part 2. Diptera, Nematocera : Families TIPULIDAE to CHIRONOMIDAE. By R. L. Coe, Paul Freeman and P. F. Mattingly. Price 20s. 0d. plus postage.

Parts marked † are on sale or in the press, those marked * in preparation.

Orders for the complete series or for separate parts can be placed with the Registrar at the Society's rooms now, but prices can only be quoted for those parts already issued.

Fellows of the Society may purchase one copy at a discount of 25 per cent. ; additional copies at the full published price.

STYLOPS, a Journal of Taxonomic Entomology.

1932-1935. Vols. 1-4 (all issued). Price £1 16s. 0d. each ; to Fellows £1 7s. 0d.

ABSTRACT OF PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON. 1935. Nos. 1-6 (all issued). 3s. 0d.

HUBNER : A BIBLIOGRAPHICAL AND SYSTEMATIC ACCOUNT OF THE ENTOMOLOGICAL WORKS OF JACOB HUBNER AND THE SUPPLEMENTS THERETO. In 2 vols. By Francis Hemming. Price : Vol. 1. 605 pp. £1 15s. 0d. ; Vol. 2. 275 pp. 15s. 0d.

THE HISTORY OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1833-1933. By S. A. Neave, assisted by F. J. Griffin. Price 10s. 6d.

SERIAL PUBLICATIONS IN THE LIBRARY OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON. 1951. Price 5s. 0d.

Published by THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON and sold at its rooms, 41, Queen's Gate, S.W. 7, price 1s. 0d.